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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/789,857	02/27/2004	Lujia Bu	52185	8487

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S. Matthew Cairns
EDWARDS & ANGELL, LLP
P.O. Box 55874
Boston, MA 02205

EXAMINER

BOYKIN, TERRESSA M

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/789,857

Applicant(s)

BU ET AL.

Examiner

Terressa M. Boykin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by US 20020161074 see abstract, pages 1-4, FIG. 1 and 6. Note also claims 8, 16, 18, 22, 27, 29.

Applicants' claims are directed to a process of fractionating a vinylidene fluoride polymer by adding a precipitant to a solution comprising a vinylidene (trifluoroethylene) and a solvent to form a mixture, wherein the solvent has at least one polarizable functional group, wherein the precipitates is miscible with the solvent and wherein the precipitant is added in an amount sufficient to produce, at a first temperature, a solid-liquid phase separation between the mixture and a fraction of the vinylidene fluorid4ed polymer, based on the molecular weight of the vinylidene fluoride polymer and isolating the weight-fractionated vinylidene fluoride polymer from the mixture.

US 20020161074 discloses high dielectric constant composites of metallophthalocyanine oligomer and poly(vinylidene-trifluoroethylene) copolymer. Particular, the reference discloses "relaxor" ferroelectric polymers or (polyvinylidene

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fluoride polymers) which are selected from the group consisting of:

polyvinylidene fluoride homopolymer, polyvinylidene fluoride-trifluoroethylene P(VDF-TrFE), polyvinylidene fluoride-tetrafluoroethylene P(VDF-TFE), polyvinylidene-fluoride trifluoroethylene-hexafluoropropylene (VDF-TFE-HFE) and polyvinylidene fluoride-hexafluoropropylene P(VDF-HFE).

With regard to claims 2 and 3 note that the preferred relaxor ferroelectric polymer has the molar percentages of polyvinylidene fluoride/trifluoroethylene from about 30/70 to about 75/25 mol %.

Note that the reference discloses, in what is referred to as the casting method, that the polyvinylidene fluoride-trifluoroethylene or P(VDF-TrFE) copolymer is first dissolved in a solvent, e.g. dimethyl formamide (DMF), and then a proper amount of CuPc powder (or precipitant) is added into the solution. The reference states that after stirring for 12 h at room temperature, the suspension was then poured onto a glass plate and dried at 70 C. for 4 h in air, followed by further drying under vacuum at the same temperature for additional 12 h to remove any remaining traces of the solvent.

With regard to the temperature dependence as claimed by applicants', note the results are shown in FIG. 5. The data shows that over a relatively broad temperature range, the dielectric constant is quite high, especially at lower frequency, e.g., 100 Hz. A dielectric maximum of about 2,300 (at 100 Hz) was observed at 70 C., which is near the Curie temperature of P(VDF-TrFE) copolymer. For the non-irradiated copolymer, the dielectric constant is 17 at room temperature and 100 Hz and increase with temperature. At the ferroelectric-paraelectric phase transition temperature, which is about 70 C. for the copolymer studied in this article, the copolymer exhibits a dielectric maximum, which is about 50. Therefore the dielectric constant of the composite, which is determined by copolymer and CuPc, also show a dielectric maximum. This is consistent with the results presented in FIG. 5.

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Note particularly claim 20 of the reference which discloses a process for preparing a high dielectric constant composite comprising the steps of: solubilizing a polymer matrix; adding at least one high-dielectric constant organic material to said polymer matrix; and forming a film. Note also the molecular structures as illustrated in FIG. 6. Note also claims 8, 16, 18, 22, 27, 29. of the reference.

With regard to the molecular weight distribution ratio, any properties or characteristics inherent in the prior art, although unobserved or detected by the reference, would still anticipate the claimed invention. Note *In re Swinehart*, 169 USPQ 226. "It is elementary that the mere recitation of a newly discovered...property, inherently possessed by things in the prior art, does not cause claim drawn to those things to distinguish over the prior art". Since the disclosed characteristics such as molecular weight distribution ratio etc. are expressed differently and thus may be distinct from those claimed, it is incumbent upon applicant(s) to establish that they are in fact different and whether such difference is unobvious. There appears to be no significant difference between the reference and that which is claimed by applicant(s). Any differences not specifically mentioned appear to be conventional. Consequently, the claimed invention cannot be deemed as novel and accordingly is unpatentable.

Correspondence

Please note that the cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site (www.uspto.gov), from the Office of Public Records and from commercial

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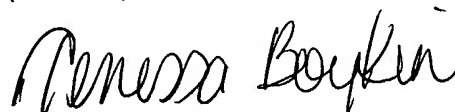
sources. Applicants may be referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Terressa Boykin whose telephone number is 571 272-1069. The examiner can normally be reached on Monday through Friday from 6:30am to 3:00pm.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. The general information number for listings of personnel is (571-272-1700).

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tmb



Examiner Terressa Boykin
Primary Examiner
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